[Federal Register: October 19, 1994]

DEPARTMENT OF ENERGY
Office of Policy

Guidelines for **Voluntary Reporting** of Greenhouse Gas Emissions and Reductions, and Carbon Sequestration

AGENCY: Department of Energy (DOE).

ACTION: Notice of availability of guidelines.

SUMMARY: Pursuant to Section 1605(b) of the Energy Policy Act of 1992, the Department of Energy has developed guidelines for the **voluntary reporting** of greenhouse gas emissions, their reduction, and carbon fixation achieved through any measure. The data will be reported on forms to be developed by the Energy Information Agency (EIA) and entered into an EIA database.

The guidelines provide for the **voluntary reporting** of greenhouse gas emissions and reductions, and of carbon sequestration. The guidelines and supporting materials will assist parties in analyzing activities and determining emissions and reductions in order to voluntarily report this data. The EIA **reporting** forms will be consistent with the guidelines. The guidelines and supporting material are finalized and will be available for distribution on or before October 31, 1994.

DATES: The Guidelines for the **Voluntary Reporting** of Greenhouse Gases under Section 1605(b) of the Energy Policy Act of 1992 will be available for distribution on or before October 31, 1994.

ADDRESSES: Copies of the guidelines and supporting documents are available in hard copy or on 3\1/2\'' diskette. Copies may be obtained by telephone request to (202) 586-3660, by facsimile request to (202) 586-2062 or (202) 586-3047, or by writing to the Office of Global Environment (PO-63), U.S. Department of Energy, 1000 Independence Ave., SW., Washington, DC 20585. Please request publication DOE/PO-0028, and indicate hard copy or diskette version.

A docket (Docket PO-VR-94-101) containing information related to development of the guidelines and a copy of the guidelines and supporting documents is available for public inspection in the DOE Freedom of Information Reading Room, Room 1E-090, at the address listed above, between the hours of 9 a.m. and 4 p.m. Monday through Friday.

FOR FURTHER INFORMATION CONTACT: Jean Vernet, Office of Global Environment (PO-63), U.S. Department of Energy, 1000 Independence Ave., SW., Washington, DC 20585, phone (202) 586-4755; or Elmer Holt, Office of Global Environment (PO-63), at the same address, phone (202) 586-0714.

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I. Statutory Authority and Background

Under Section 1605(b) of the Energy Policy Act of 1992 (EPAct; Pub. L. 102-486), the Secretary of Energy with the Energy Information Administration, and in consultation with the Environmental Protection Agency (EPA), is required to establish a **voluntary reporting** system and database on emissions of greenhouse gases (GHGs), reductions of these gases, and carbon fixation. DOE is required to publish, after public comment, guidelines setting procedures for the accurate **voluntary reporting** of information on: (1) Greenhouse gas emissions on an annual basis for the baseline period 1987 through 1990, and for subsequent calendar years; (2) annual reductions of greenhouse gases and carbon fixation achieved through any measure; and (3) reductions in greenhouse gas emissions achieved voluntarily, or as a result of plant or facility closings, or as a result of State or Federal requirements.

The guidelines and supporting materials finalized today will assist those who wish to participate in determining or developing information capable of being reported. The **reporting** forms and database system required under Section 1605(b) are to be developed by EIA and must be consistent with the guidelines.

Draft guidelines and supporting materials were made available for public comment on June 1, 1994 (59 FR 28345); that notice discusses the draft guidelines. A public hearing on the draft guidelines was held on June 29, 1994. The draft supporting document for the agricultural sector was made available June 30, 1994 (59 FR 33733). Comments were provided by individuals and associations representing: public interest environmental and land use groups; investor-owned and publicly-owned utilities; independent power producers; oil production and use; coal production and use; motor vehicle manufacturing and use; chemical manufacturing; and academic, commercial, and public interest forestry interests.

II. Discussion of Final Guidelines and Comments Received

A. Organization of the Final Guidelines and Supporting Materials

In response to comments, the final guidelines and supporting materials have been re-organized from that presented in the draft. The coverage of each sector-specific supporting Part, however, is the same as that contained in the parallel Part of the draft documents. The final guidelines and supporting documents, DOE/PO-0028, are organized in three volumes:

Volume 1--General Guidelines
Volume 2--Sector-Specific Issues and **Reporting** Methodologies Supporting the General Guidelines
Part 1--Electricity Supply Sector
Part 2--Residential and Commercial Buildings Sector
Part 3--Industrial Sector
Volume 3--Sector-Specific Issues and **Reporting** Methodologies Supporting the General Guidelines
Part 4--Transportation Sector
Part 5--Forestry Sector
Part 6--Agricultural Sector

The material provided in the draft supporting document, Part 7, dealing with Global Warming Potentials, has been revised as discussed below, and now appears as Appendix E to each supporting volume.

B. Purpose of the Guidelines and Design Principles

The final guidelines and supporting materials have been developed to reflect the goal of maximizing participation without compromising the usefulness of the data voluntarily submitted. Commenters on the draft guidelines generally supported the appropriateness of this goal, although some did not agree on how to strike a balance between maximizing participation and establishing a meaningful data **reporting** system. The flexibility provided by the draft guidelines, which takes into account the reporter's ability to use existing information and select appropriate quantification methods, was supported by many commenters as necessary to encourage participation.

However, some comments from environmental public interest groups and forestry public interest groups urged that the final guidelines include requirements for verification of emissions reductions and carbon sequestration data. These commenters believe that the flexibility provided by the program made data verification essential to the credibility of the information entered into the database. Many of these comments acknowledged that the statute directed neither DOE nor reporters to obtain verification of data reported, but suggested that third party verification could provide users of the database with better assurances of its accuracy.

Some of these commenters indicated that, in the alternative, the program should direct reporters to indicate the basis for the data submitted based on a categorization system, and that the database should be designed to allow sorting of data on the basis of this categorization. For example, a report would indicate that data was based on measurement, estimation, or use of default tables, and whether emissions reductions project reports were accompanied by historic or entity-wide emissions data. A database user would be able to retrieve reported data on the basis of these categories.

In order to provide the flexibility necessary to encourage **reporting**, the guidelines do not provide prescriptive features such as verification. Rather, the guidelines indicate that a reporter will be asked to categorize the data submitted. This categorization will include third party verification as well as whether the data was measured or estimated. Segregation of data by categories will be possible.

DOE believes the approach of requesting the identification of data derivation, and of any data verification performed, accommodates both the need to maximize participation by providing flexibility, and the need to create a useful and accessible database.

C. Changes to Draft Guidelines for Final Guidelines

After reviewing the comments received, DOE revised several provisions of the draft general guidelines and some provisions of the sector-specific supporting documents. The changes to the draft guidelines include: the addition of gases to the list of those reportable under the program, with delayed implementation for some of those gases not covered in the draft guidelines; a limitation on **reporting** project activities to those that achieved new emission reductions or carbon sequestration beginning with January 1, 1991; revision of the discussions about distinctions between primary and secondary effects, and between direct and indirect emissions; and guidance on amending a previous year's report.

A discussion of responses to significant comments on issues in the draft general guidelines appears below. Significant changes as a result of comments received on the sector-specific documents are discussed below by sector document.

1. Gases Covered

The legislation does not define ``greenhouse gases.'' The draft guidelines covered emissions of carbon dioxide, methane, nitrous oxide, as well as many of the halogenated substances. The final guidelines add two halogenated substances, halon 1211 and halon 2402, to the list of gases and substances covered. In addition, DOE announces the delayed addition of three greenhouse gases, nitrogen oxides, nonmethane hydrocarbons, and carbon monoxide, to the **reporting** program starting with the third **reporting** cycle of the program which is expected in 1997.

a. Additional Gases to be Covered--Conventional Pollutants

Comments on the gases and substances covered by the draft guidelines supported expansion of the program to a more comprehensive list of greenhouse gases, especially some conventional, or ``criteria,'' pollutants regulated under the Clean Air Act for which emissions data is collected by EPA and State agencies under various air quality programs. These gases are nitrogen oxides, nonmethane hydrocarbons, and carbon monoxide. Although these gases are not direct greenhouse gases, they contribute to the formation of carbon dioxide and/or tropospheric ozone.

The international scientific community has been unable to quantify the differential radiative activity of these gases, and thus has not provided an index of the climate change effects of these gases relative to carbon dioxide. Because emissions data reported under the program will be reported in units of weight, and not reduced by any common index of comparative radiative effects, it is unnecessary to exclude gases from the program solely on the basis that a quantification of comparative effects is not available.

DOE agrees that a more comprehensive 1605(b) **reporting** program should cover these indirect gases, and has expanded the gases covered by the **voluntary reporting** program to include nitrogen oxides, nonmethane hydrocarbons, and carbon monoxide. However, for the reasons discussed below, DOE is delaying the programmatic acceptance of voluntarily reported data on emissions and emissions reductions of these gases for a period of two years. Thus, reports of data related to these gases will first be accepted by EIA during the third **reporting** cycle of the program, i.e. with reports filed in 1997. These reports may include the results of activities beginning January 1, 1991, as well as historic emissions data on these gases for the period 1987 to 1990.

The primary reason for delaying the addition of these gases is to aid in the efficient administration of this new program. Neither DOE nor EIA has sufficient experience in **voluntary reporting** to predict the volume of participation in this program or the difficulties that may arise in its implementation. EIA expects that experience gained in the first two years of the program will enhance its ability to smoothly accommodate this expansion of the **reporting** program.

b. Additional Gases to be Covered--Halogenated Substances

Comments were also received on the list of halogenated substances for which emissions and reductions will be reportable. In response to these comments, the final guidelines add two halogenated substances, halon 1211 and halon 2402, to the list of reportable gases. Given the limited amount of **reporting** anticipated on these substances, initial coverage of the program includes these gases.

As explained in the June 1994 notice of availability for the draft guidelines, the inclusion of some halogenated substances in the **voluntary reporting** program is based on the language of Section 1605(b)(1)(B), referring to the reportability of reductions in greenhouse gas emissions achieved through ``chlorofluorocarbon capture and replacement.'' Without this language, DOE might have limited the **voluntary reporting** program to those gases covered by the United Nations Framework Convention on Climate Change, thus excluding the chlorofluorocarbons (CFCs) and other halogenated substances, including the two halons now covered, from the **reporting** program.

One comment noted that the draft guidelines' failure to list halon 1211 and halon 2402 as reportable gases was inconsistent with the listing of halon 1301. The draft guidelines and supporting materials listed only those halogenated substances for which the Intergovernmental Panel on Climate Change (IPCC) had published an index of global warming potential (GWP) relative to carbon dioxide. While there are internationally accepted indices of stratospheric ozone depletion potential for halogenated and bromide substances in addition to those listed in the draft guidelines and supporting documents, the IPCC published a GWP for halon 1301, but not for any other halon.

Based on stratospheric ozone depletion characteristics, the halogenated substances are covered by an international agreement, the Montreal Protocol on Substances Depleting the Stratospheric Ozone, and under U.S. law are regulated under Title VI of the Clean Air Act Amendments of 1990. These gases are greenhouse gases, although they also have the antagonistic characteristic of destroying tropospheric ozone, which tends to indirectly produce global cooling. These antagonistic effects complicate the analysis of their impact on the global climate, and have divided the scientific community over whether the net effect of some of these gases will be global warming or cooling.

This division in the scientific community has made it difficult to determine the quantitative global warming potential of these gases. Because emissions data reported under the program will be reported in units of weight, and not reduced to a standard measure by application of a common index of comparative radiative effects, and to be consistent with the decision discussed above on conventional pollutants, halon 1211 and halon 2401 are added to the list of gases for which emissions may be reported under the program. Based on the limited amount of activity in production and use of these substances, and on the similarity in emissions of these substances to other halogenated substances, DOE has determined that there is no administrative need to delay acceptance of submissions on these gases.

2. Limitation on Vintage of Reportable Projects

The General Guidelines include a new section, discussing the limitation on **reporting** projects which resulted in a reduction in emissions, but on which activity commenced before 1991. The final guidelines permit **reporting** as projects only new (post-1990) emissions reductions and carbon sequestration. Pre-1991 emissions reductions will be reflected in emissions **reporting** only. Thus, the results of all emission reduction activities which are first achieved in 1991 are reportable as projects, even if the activity commenced before 1991. For example, in the case of an ongoing demand side management program, emissions changes arising from energy savings through appliance replacement in 1991 can be reported as project results, but the effects of appliance replacements before 1991 are not reportable as emissions reduction projects. Rather, these effects are subsumed in emissions **reporting** for the baseline period of 1987 through 1990.

The draft guidelines had no comparable discussion. Some commenters maintained that a time limitation on reportable emissions reduction projects was necessary, particularly because under the guidelines reporters may separately report emissions and emissions reductions. These comments indicated that the statutory language of section 1605(b)(1)(A)(i) providing for 1987 through 1990 as baseline years for emissions **reporting** implied that emissions reductions **reporting** under section 1605(b)(1)(B) was limited to reductions occurring after 1990. Reductions occurring before 1991 would be reportable only for their effect on emissions reported for the baseline years, rather than separately as emissions reductions projects.

Since the statutory language on **reporting** emissions reductions is not explicitly tied to any specific year or years, and the years 1987 through 1990 are referred to as the baseline period, DOE is persuaded that goals of the **reporting** program are best served by limiting reports of emission reduction projects to new emissions reductions after 1990. Many emission reduction projects have multi-year or multi-decade lives; without a time limitation, the database would include the emissions reductions results of older activities more appropriately reflected within emissions **reporting** rather than highlighted separately as emissions reduction projects.

3. Direct and Indirect Emissions

The **reporting** program covers activities which directly or indirectly result in greenhouse gas emissions or emissions reductions. DOE has revised the text of the General Guidelines to clarify the distinction between direct and indirect emissions in order to assist reporters in identifying the distinction.

Some commenters supported limiting the program to submissions of data on direct emissions, and to activities that directly produce or reduce emissions, in order to provide clarity in the program's

database. Other comments supported the draft's inclusion of activities that indirectly impact greenhouse gas emissions, based on the statutory listing in Section 1605(b)(1)(B) of activities which indirectly affect, or may indirectly affect, emissions or reductions. Additionally, many comments evidenced confusion over the draft's discussion of direct and indirect emissions.

DOE agrees that the statutory listing of activities which indirectly affect emissions, as well as activities that directly affect emissions, supports the inclusion of both direct and indirect emissions in the **reporting** program. DOE also agrees that these concepts are potentially confusing. To assist reporters in identifying direct and indirect emissions, DOE has revised the text of the General Guidelines. It is apparent from many of the comments that this confusion was largely created by intertwining the concepts of primary and secondary effects of an activity with the concepts of resulting direct and indirect emissions.

In response, DOE has eliminated the distinction between primary and secondary effects of a project, leaving a single concept of ``effects''.

4. Primary and Secondary Effects

Based on comments expressing confusion over the concepts and the draft guidance for the inclusion of both primary and secondary effects in project analysis, the final guidelines have eliminated the distinction. While the concepts are still presented in Section GG-5.9, the reporter is urged to consider and report the known and quantifiable ``effects'' of a project without regard to whether they are primary or secondary. To provide additional clarity, the final guidelines also present examples of different types of effects.

5. Amending a Previous Year's Report

The final guidelines add a provision which allows reporters to amend any previous year's report. The program will, for example, accept reports based on estimated and default data, which will be identified as such by the reporter. (See discussion at II.B., above.) Where a reporter subsequently develops better data, for example through field measurements or utility-specific emissions factors, the original report may be modified based on information developed using the later-acquired data. The amended report will include the reason for the revision and a comparison of the amended report's changes to the original report.

The primary reason for adding this provision is to encourage reporters to develop their own activity-specific data, without discouraging **reporting** based on less-specific estimation or default data.

6. Radiative Forcing of Greenhouse Gases

The language of Section 1605(b)(1) provides that the **reporting** guidelines are ``to establish procedures for taking into account the differential radiative activity and atmospheric lifetimes of each greenhouse gas.'' The draft guidelines and the supporting materials included as Part 7, ``Global Warming Potentials'' (GWPs), describing the GWP index developed by the IPCC as a simple method for representing the relative effects on climate resulting from a unit mass of a greenhouse gas.

Comments unanimously supported DOE's decision to require that emissions data be reported only in units of greenhouse gases emitted, and not to require reporters to convert these data to the effects of the gases reported relative to carbon dioxide. The final guidelines continue to direct that reported data will be in units of gas emitted. Commenters expressed concerns that (1) the concept of GWPs was too

complex to be useful to most reporters in developing GHG mitigation options; (2) the discussion in draft Part 7 of the scientific basis of GWPs was flawed; and (3) use of scientific work not yet formally adopted by the IPCC was inappropriate.

In response to comments, draft Part 7 has been substantially condensed and appears as Appendix E in the two supporting volumes. The expansion of draft Part 7 to clarify fully the many complex and evolving scientific issues was deemed outside the scope of the **voluntary reporting** program. A brief discussion of the concept, together with a chart of the latest quantitative GWP index developed by the international scientific community, is provided in the Appendix. The reader/user is referred to other sources for additional information.

DOE agrees that the scientific concepts involved in GWPs, such as time horizons, carbon cycle models, and integration time scales, may not be clearly understood by many in the general **reporting** population. The ongoing improvements in our understanding of the complex global climate system and analytic models developed are evidenced, as discussed in the Notice of Inquiry preceding the draft guidelines, by the 1992 revision of the 1990 IPCC report on GWPs. Further, revisions to the 1992 report have been approved by an IPCC subsidiary body, Working Group I, and will be published later this year. It is from this anticipated publication that the GWPs provided in the draft and final guidelines are taken.

The IPCC, an international body charged with reaching international consensus on the complex scientific matters in climate change, is supported by the United States. IPCC work will ultimately be a factor in both domestic and international analyses on climate change mitigation options. It would thus be imprudent for the DOE **reporting** guidelines to address differential radiative forcing in a manner inconsistent with the IPCC. The 1994 revisions to the IPCC GWP index have been approved by Working Group I and are expected to be formally accepted by the full IPCC soon after publication of the final guidelines. DOE is using this material in advance of its formal acceptance for administrative ease.

7. Editorial and Minor Revisions

In response to various comments, editorial revisions were made throughout the General Guidelines and the supporting documents as follows.

Case studies and examples. Case studies and examples are provided for the purpose of illustrating the process of project analysis in light of a reporter's purpose and sector-specific circumstances and conditions. Some commenters suggested that some of the case studies and examples provided were unrealistic, that they suggest a greater **reporting** burden for reporters in some sectors than in others, or that they appear to require the use of certain approaches and methods for some activities.

To address these comments, the following text has been added to all case study and example presentations:

Note: This example illustrates only one approach in analyzing a project; your analysis, methods, and calculations will vary depending on your particular circumstances, the geographic location of the project, and other factors.

Examples are intended to provide, in an educational manner, illustrations of various approaches to project and emissions analysis permitted within the guidelines. They are not intended to imply any additional directions or restrictions on **reporting** over and above that

provided by the Guidelines. The case studies and examples do, however, suggest to potential reporters different ways in which existing data and resources may be used to develop a report. The illustrated cases thus differ in detail based on the stated purpose of the hypothetical reporter for **reporting**, and the individual circumstances surrounding the project and the reporter. Consistent with the goal of maximum participation in the program, the flexibility of the **reporting** program is not bound by any particular case study or example discussion on any issue.

Subjective Terminology

Comments were made that the use in the guidelines and the supporting materials of certain descriptive terms, relative to a reporter's decisions regarding the data developed and reported, were inappropriate within a **voluntary** program. The program's flexibility allows reporters to select among various approaches in developing a report. These selections do not encompass comparative value of the reporter's activities. No value judgments are intended by the use of subjective terms in any description of the reporter's choice of approaches. Accordingly, the final guidelines and supporting materials have been revised to minimize use of these terms, and to better reflect that judgments on the quality of the data reported are to be made by the reporter and database user, and not by the **reporting** program. Where these terms remain in the guidelines and supporting documents, they are intended to reflect differing perspectives of both reporters and database users on choices permitted by the **reporting** program.

D. Changes to Draft Sector-Specific Supporting Documents for Final Sector-Specific Documents

Comments were received on all draft sector specific supporting documents. Revisions to the draft guidelines in response to comments on less significant technical, mathematical, or editorial errors in the draft sector specific supporting documents are not individually discussed in this notice, but were considered and addressed where appropriate.

Most comments fall into several categories of issues, including those that have been addressed in the final General Guidelines and discussed above in section II.C. of this notice. These categories include: failure to discuss all emissions reduction or carbon sequestration activities applicable to the sector; criticism of the case studies' use of unrealistic circumstances; the accuracy, completeness, and degree of conservativeness of default tables; and the lack of balance among sector documents indicating differing **reporting** burdens.

The program is expressly intended to provide reporters with the flexibility to report on the achievements of all emissions reduction and carbon sequestration activities. The failure of the draft guidelines and supporting materials to discuss or list any particular activity does not indicate that its achievements are not reportable under the 1605(b) program.

In response to comments, the final supporting documents add discussions of some additional emissions reduction and carbon sequestration approaches, and provide more emphasis to some of the approaches discussed in the draft. Nevertheless, the guidelines and supporting documents are not intended to provide an exclusive list of

all activities that may be reported. The guidelines could not, for example, provide identification and quantification of achievements from the novel, innovative actions for which the information sharing function of the **voluntary reporting** program is paramount.

As discussed above in C.7., the guidelines and supporting documents use case studies and examples to illustrate the application of concepts and varied approaches to project analysis and **reporting**. Reporters are not bound by the particulars of any presentation. Rather, the guidelines provide reporters the flexibility needed to adapt project analysis approaches to particular circumstances, including the type of project, the availability of necessary data, and the purpose for **reporting**.

Thus, while revisions have been made in many case studies and examples throughout the documents in response to comments regarding realism, these study examples are not intended to be exhaustive of the range of appropriate approaches that reporters may develop and use to determine the data to report under this program.

Significant comments were received on the accuracy, completeness, and degree of conservativeness of the default tables provided in the supporting documents. Based on DOE's technical judgment on individual comments, errors have been corrected. Responses to these comments on specific sector default tables appear below in the discussion of the relevant sector.

In keeping with the flexibility of the program, reporters are encouraged to use and develop data specific to the project being reported to accommodate their individual circumstances. The continued inclusion of default tables is, however, in keeping with the goal of maximum participation, where the wide disparity among potential **reporting** populations supports the need to provide some ``lookup'' tables for use at the discretion of the reporter.

Default tables, by their nature, may provide an easy way for reporters to estimate the quantity of certain factors they may need in order to report. By virtue of their ease of use, these tables cannot accommodate all variables involved; rather, they are based on judgments on appropriate methodologies and available data. In some fields of endeavor, there is no apparent consensus on methodologies and the quality and quantity of data needed either to develop default tables or to definitively judge their conservativeness. The default tables provided are, in DOE's judgment, generally conservative.

Some commenters asked that DOE add default tables covering additional data quantification areas. While DOE agrees that the addition of tables in these documents could be helpful to reporters, their development did not warrant a delay in issuing the final guidelines and supporting documents. In many instances, measurement and other methodologies are in their relative infancy. DOE expects that data and methodologies will evolve as national and international interest continue in the areas of greenhouse gas emissions reduction and carbon sequestration. Since reporters are permitted to develop their own data and submit it to the **voluntary reporting** program, the program itself may aid in the development of methodologies and the accumulation of data to advance knowledge in these areas. DOE acknowledges that sector-specific documents appear to differ greatly in the detail with which applicable concepts and approaches are discussed. This distinction was especially noted in comments on the Electricity Supply Sector, Residential and Commercial Buildings Sector, Industrial Sector and Forestry Sector documents, expressing concern that the differences may indicate a higher **reporting** burden for these sectors.

The differences in focus and depth are based primarily on the breadth of technical knowledge of each sector's greenhouse gas and emissions reduction or carbon sequestration features, including the knowledge held by each sector's population and the degree to which reporters will have or can develop sufficient data necessary for a report. These differences in focus and depth do not direct any additional or supplementary requirements for these sectors. Minimum **reporting** requirements, set forth in section GG-6 of the final General Guidelines, are identical for all reporters and projects, regardless of sector.

1. Electricity Supply

In addition to the revisions discussed above, in response to comments on the draft Electricity Supply Sector document, the final Electricity Supply Sector document includes more prominent mention of: (1) The possible use of Integrated Resource Planning data and data development methods; (2) the role of least-cost or other dispatching modes; (3) the role of hydroelectric power in renewable energy; and (4) emissions reduction projects in electrotechnologies. The discussion of relevant electrotechnologies has been augmented in the Industrial and Transportation Sector documents as well.

Comments were received on requiring reporters in this sector to use certain existing Federal or State requirements, or other existing protocols in developing **reporting** data. One example of a Federal protocol is the EPA's Conservation and Verification Protocol, 40 CFR Part 73, which is used in the acid rain program under title IV of the Clean Air Act Amendments of 1990 to determine the distribution of bonus sulfur dioxide allowances based on electricity conservation programs. Another example under the Federal acid rain program is EPA regulations providing for monitoring or estimating and **reporting** carbon dioxide emissions from certain boilers. Many States also have protocols dealing with estimating energy savings from demand side management (DSM) programs.

While activities in this sector are characterized by an extensive array of measurement and estimation methodologies and protocols, many of which are mentioned in the guidelines and supporting documents, DOE does not require their use for the **reporting** program. Consistent with the flexibility of the program, reporters may choose to use appropriate protocols and data developed for other reasons, including compliance with Federal and State requirements.

Significant revisions to some of the examples for this sector were made in response to comments that the scenarios and quantification specifics provided were unrealistic. In addition to these revisions, the language of the caveat discussed in section II.C.7., above, has been added to the presentation of all examples for the purpose of indicating that the example is meant to illustrate concepts, not to prescribe the use of specific approaches.

2. Residential and Commercial Buildings

Comments on the supporting document for the Residential and Commercial Buildings Sector reflect similar concerns to those raised on the Electricity Supply Sector document. In response to comments, DOE has added discussions of electrotechnologies specific to this sector and identified additional conservation techniques. DOE has clarified that the ability to report the results of an activity is not dependent on whether that technology or technique is mentioned in the guidelines or supporting documents.

Activities in this sector are characterized by an array of measurement and estimation methodologies, some of which are mentioned

in the document. Comments were received on requiring reporters to use specific protocols available for this sector. For the same reasons as discussed in section D.1., above, the guidelines do not prescribe the use of specific methodologies or protocols for measurement or estimation.

3. Industrial

In response to comments, DOE has modified discussions on the appropriate consideration of the obsolescence of equipment in determining the reference case for reportable projects. Biomass emissions factors have been clarified, and the distinction between temporary and permanent fuel switching has been eliminated.

Similar to other sector-specific documents, the final Industrial Sector supporting document has expanded discussions of electrotechnologies specific to this sector and identified additional conservation techniques. The ability to report the results of an activity is not dependent on whether a technology or technique is mentioned in the guidelines or supporting documents.

4. Transportation

In addition to the general revisions discussed above, DOE has expanded the discussion on electric vehicles in the Transportation Sector supporting document. Activities in the transportation sector are characterized by an extensive array of measurement and estimation methodologies, some of which are mentioned in the document. The use of some of these methodologies is required under various Federal regulatory and funding programs, such as those which regulate vehicle air pollutant emissions or award highway construction funds. For the reasons discussed above, reporters are not limited to using these protocols.

5. Forestry

Comments on the Forestry Sector document related to its apparent emphasis on carbon sequestration activity from new or replacement forestation, together with a corresponding lack of emphasis on forest preservation, forest management, and urban forestry. The varying treatment of types of carbon sequestration activity is not meant to imply a preference by DOE, or by the **reporting** program, for any particular type of forestry activity. It is, rather, based primarily on the state of the knowledge in these areas of forest carbon sequestration. Similar to other sector documents, **reporting** is not limited to the activities discussed.

Comments on the limited tree species and associated reference cases provided for standard forestry projects suggested that the table be expanded to include additional species. These data were developed with the assistance of U.S. Forest Service staff, and the tables are based on the availability of sufficient information to generalize carbon sequestration effects of certain activities. While such information is available for the major commercial species which are addressed in the tables, DOE believes that there is insufficient information available to develop adequate default tables on other species or reference cases. For additional species and reference cases, as well as for other forestry activities, the reporter will need to develop specific project data.

Other commenters stated that field measurements for projects in this sector were particularly essential to assure the accuracy of the data submitted. Consistent with the flexibility necessary to encourage **reporting** in this and all other sectors, the guidelines do not provide prescriptive features such as requiring field measurements. Rather, the guidelines indicate that a reporter will be asked to categorize the

data submitted, including whether it is based on measurement.

6. Agricultural

Comments received on the draft document for the Agricultural Sector were indicative of the complexity of the sector, and its unique characteristic of including reportable activities that contribute both to greenhouse gas emissions and to carbon sequestration.

Comments were received on the failure to include any discussion of certain emissions reduction or carbon sequestration approaches specifically applicable to the agricultural sector. In response to these comments, additional text has been added on windbreaks and shelterbelts, changes to grazing land, and the production of biomass for fuel. The failure of the document to address other agricultural activities which affect greenhouse gases or carbon sequestration is not intended to preclude data submissions on those activities, including energy efficiency improvements.

7. Adjusted Electricity Emissions Factors by State

Substantial and detailed comment was received on the draft Appendix C, ``Adjusted Electricity Emissions by State,'' which appeared in all draft sector supporting documents. After consideration of the comments received, Appendix C has been revised to employ a simpler methodology and the inclusion of nonutility generation emissions. A summary of the methodology used for the table appears together with the table in Appendix C. The published data on fuel use and technologies used are identified.

In response to comments that the draft failed to include nonutility generation, emissions factors for nonutility generation have been added, together with weighted combined emissions factors for utility and nonutility generation. Where the reporter utilizing the table knows whether the power is utility or nonutility generated, the appropriate factor should be used. The combined factor is intended for use when the reporter is unable to make this identification.

In keeping with the flexibility of the program, reporters are encouraged to use emissions factors specifically applicable to the project being reported. Where a utility-specific factor is available, for example, it will incorporate actual fuel mix and dispatching modes which are not differentiated within a State factor provided in Appendix C. The inclusion of revised Appendix C is in keeping with the programmatic goal of maximum participation, by providing a method for estimating emissions and reductions when other data are not easily available.

III. Administrative Requirements

A. Regulatory Review

DOE has determined that this is not a significant regulatory action because it does not meet the criteria which define such actions under Executive Order 12866, 58 FR 51735, and is therefore not subject to regulatory review. Accordingly, the Office of Management and Budget (OMB) has informed DOE that no clearance of the guidelines and supporting materials is required.

B. Issues Under the Paperwork Reduction Act

The provisions of section 1605(b) direct EIA to develop the **reporting** forms and database for the **reporting** program, consistent with the guidelines issued today. Separate administrative requirements apply

to the development of EIA **reporting** forms.

Any information collection requirements proposed for the **voluntary reporting** program are subject to the Paperwork Reduction Act, 44 U.S.C. 3501 et seq., and will be submitted to the Office of Management and Budget for review and approval of paperwork requirements. EIA anticipates the availability of draft **reporting** forms for public comment within 30 days. A notice on the availability of the draft **reporting** forms will appear in the Federal Register.

Issued in Washington, DC on October 13, 1994.

Susan F. Tierney,

Assistant Secretary, Office of Policy.

[FR Doc. 94-25901 Filed 10-18-94; 8:45 am]

BILLING CODE 6450-01-P